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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/583,676

06/19/2006

Rikke Monica Festersen

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EXAMINER

ARIANI, KADE

ART UNIT

PAPER NUMBER

1651

MAIL DATE

DELIVERY MODE

04/01/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/583,676	Applicant(s) FESTERSEN ET AL.	
	Examiner KADE ARIANI	Art Unit 1651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 28-50 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☒ Claim(s) 28-50 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/21/06 and 5/7/07</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

The preliminary amendment filed on June 19, 2006, has been received and entered.

Claims 1-27 have been canceled.

Claims 28-50 are pending in this application and were examined on their merits.

Claim Objections

Claims 28-50 are objected to because of the following informalities:

Claims 42-45 are missing, therefore the numbering of the claims is incorrect.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 28, 30, 31, 32, 34, 36-39, 46, 49, and 50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 28 and 30 recites the limitation "said composition". There is insufficient antecedent basis for this limitation in the claim.

Regarding claims 31, 32, 34, 36-39, 49, and 50, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim 46 is dependent on a cancelled claim, it is unclear which claim it is dependent on, and therefore claim 46 is indefinite.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 28-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laroye (EP 0910620B1) in view of Henrissat & Davies (Current Opinion in structural Biology, 1997, Vol.7, p.637-644) and further in view of Schüle M. (Journal of Bacteriology, 1997, Vol. 57, p.71-81), and further in view of Kofod et al. (US Patent No. 6,197,564), and further in view of Bower et al. (WO 99/31255), and further in view of Sandal et al. (WO 9727292-A1), and further in view of Lund et al. (WO 97/18286).

Claims 28-50 are drawn to a process for production of a mash having enhanced filterability, which comprises; preparing a mash in the presence of enzyme and filtering the mash to obtain a wort, wherein the enzyme comprise; a xylanase of GH family 10 (present in an amount of at least 15% w/w), endoglucanase (GH12) present in an amount of at least 40% w/w, xylanase type A, arabinofuranosidase, and a composition comprising at least 15% w/w GH10 xylanase, and at least 20% w/w GH12 endoglucanase.

Claim 41 and 45 are drawn to a process of reducing the viscosity of an aqueous solution comprising a starch hydrolysate, said process comprising, testing at least one xylanolytic enzyme for its hydrolytic activity towards insoluble wheat arabinoxylan, selecting a xylanolytic enzyme which cleaves next to branched residues thereby leaving terminal substituted xylose oligosaccharides, adding the xylanolytic enzyme to the aqueous solution comprising a starch hydrolysate, and testing at least one endoglucanolytic enzyme for its hydrolytic activity towards barley beta-glucan, selecting an endoglucanolytic enzyme (under conditions), adding the selected endoglucanolytic enzyme to the aqueous solution comprising a starch hydrolysate.

Laroye teaches a process for production of a mash having enhanced filterability, which comprises; preparing a mash in the presence of enzyme and filtering the mash to obtain a wort, wherein the enzyme comprise; a xylanase , and a composition comprising mixture of enzymes (pages 2-3 0002, 0009, 0013, and 0015), xylanase was obtained from *Aspergillus niger* (page 4 0028).

Laroye teaches enzymes that may be used are cellulases, β -glucanases, and other plant cell wall degrading enzymes (page 3 0018), several microbial enzymes may be used (page 4 0022 and 0025).

Laroye teaches a need for methods of preparing wort with further improved filterability and increased yield (page 2 0008), a faster process, less clogging filters and larger wort volumes, also the improved yield leads to a more economic brewing process (page 4 0026).

Laroye teaches a process of reducing the viscosity of an aqueous solution comprising a starch hydrolysate, said process comprising, testing at least one

xylanolytic enzyme for its hydrolytic activity by hydrolysis of xylan from oat spelts (page 4 0028).

Laroye does not teach xylanase is a type A, endoglucanase GH-12, and the amount of enzymes in % w/w of the total. However, Henrissat & Davies teach glycoside hydrolases, xylanase type A, endoglucanase GH-12 (p. 640 2nd column 2nd paragraph, and p. 641 Table 1.). Also, Schülein teaches cellulase-degrading enzymes from *Humicola insolens* possesses which cooperate in the efficient hydrolysis of cellulose and lower the viscosity of the solutions (p.72 1st paragraph).

Moreover, routine experimentation is widely used by one of ordinary skill in the art to determine optimum or workable ranges of particular parameters such as pH, temperature, concentration of the enzyme or its substrate. “[W] here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) (MPEP Chapter 2100 – p.141).

Moreover, Kofod et al. (US Patent No. 6,197,564) teach xylanase derived from *Aspergillus aculeatus* (SEQ ID No.9), Bower et al. teach xylanase (SEQ ID NO. 16), Sandal et al. (WO 9727292-A1) teach xylanase from *Myceliophthora thermophila* (SEQ ID No. 13), xylanase from *Humicola insolens* (SEQ ID. No. 12), Lund et al. (WO 97/18286) teach endoglucanase is derived f *Humicola insolens* (SEQ. ID No.3).

Therefore, it would have been obvious to one of ordinary skill in the art to modify the process as taught by Laroye by substituting the enzymes xylanase and endoglucanase with the prior art xylanases and endoglucanases as taught by Henrissat

& Davies to provide a process for production of a mash having filterability and improved yield after filtration. Because the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention. Also further motivation for the modification of the process as taught by Laroye would be the need for more efficient, improved, economic method of preparing wort, by providing a faster process, less clogging filters, and larger wort volume.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kade Ariani whose telephone number is (571) 272-6083. The examiner can normally be reached on 9:00 am to 5:30 pm EST Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached on (571) 272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Leon B Lankford Jr/
Primary Examiner, Art Unit 1651

Kade Ariani
Examiner
Art Unit 1651